

A REDEFINITION OF PENSTEMON ARKANSANUS PENNELL  
(SCROPHULARIACEAE)

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The descriptions and placements of Penstemon arkan-  
sanus Pennell by various taxonomists have in some  
cases digressed from the taxon originally described  
by Dr. Francis Pennell. In attempting to define and  
limit the Oklahoma and Arkansas representatives of  
the Series Graciles of the genus Penstemon the author  
finds it advisable to redefine P. arkan-  
sanus in Dr. Pennell's original sense and as the plant actually  
occurs as a distinct taxon in its habitat in eastern  
Oklahoma and western to central Arkansas.

PENSTEMON ARKANSANUS Pennell, Proc. Acad. Nat. Sci.  
Phila. 73:493. 1922.

P. pallidus subsp. arkansanus (Pennell) Bennett,  
Phytol. 9:57. 1963.

P. multicaulis Pennell, Proc. Acad. Nat. Sci. Phila.  
73:494. 1922.

P. wherryi Pennell, Monogr. Acad. Nat. Sci. Phila.  
# 1:228. 1935.

P. pallidus sensu Gleason (as to P. arkan-  
sanus only, in synonym.), New Ill. Flora ... etc. 3:224.  
1952.

P. australis subsp. laxiflorus (Pennell) Bennett  
(as to P. wherryi only, in synonym.), Phytol.  
9:58. 1963.

Stems one to many, 2.5-6 dm, gray-puberulent, usually  
purplish; basal leaves obovate, petioled, purple on  
the lower surface, middle cauline leaves up to 80 mm  
long, averaging six times as long as wide, elliptic-  
lanceolate, essentially glabrous, with slight pubes-  
cence on midrib and main veins, dark olive green, mi-  
nutely serrate-denticulate or entire, ascending; in-  
florescence glandular pubescent, of three to five  
fascicles, lateral branches well-developed, usually  
diverging arcuately from the principal axis, re-  
branching cymosely three or more times, many-flowered,  
bracts much reduced, subulate; sepals puberulent,  
2-4 mm long, ovate, acute, scarious-margined; corolla  
pale violet or white, 15-18 mm long, tube and throat  
subequal, throat expanded, orifice wide open, the  
upper lobes upcurved, the lower spreading, flabelli-  
form, throat with fine violet lines within, staminode  
barely exerted, heavily bearded with yellow hairs.

Flowering April, May on shaley outcrops near edge of woods and on exposed shale and clay roadside cuts and banks.

P. arkansanus is distinguished from P. pallidus by corolla form, P. pallidus having a tube to throat length ratio of 1:2 rather than subequal, the throat scarcely expanded, and the lower lip narrow and forward thrust; by leaf form, P. pallidus having leaves averaging only four times as long as wide; and by pubescence, P. pallidus having leaves puberulent to velvety pubescent or hirsute, and stems usually hirsute.

P. arkansanus is distinguished from P. laxiflorus by corolla form, P. laxiflorus having a tube to throat length ratio of 1:2, with the orifice partly closed by the uparching, strongly grooved lower lip. The cauline leaves of P. laxiflorus are usually divergent from the stem rather than ascending. P. laxiflorus grows in sandy soil.

McWilliam, in Ark. Acad. Sci. Proc. XXI, 1967, verifies Pennell's acknowledgement by letter to Dr. D.M. Moore that P. multicaulis Pennell and P. wherryi Pennell should be placed in synonymy with P. arkansanus Pennell.

Excluded species: P. arkansanus var. pubescens, acknowledged by Pennell to be the same as P. pallidus Small (Pennell, 1935).

These conclusions are based on extensive field observations in central to western Arkansas and eastern to central Oklahoma, and on examination of specimens in the following herbaria: OKL, UARK, TUL (U. of Tulsa).

Specimens examined: P. arkansanus, ARKANSAS counties (43 collections): Benton, Carroll, Cleburne, Conway, Faulkner, Franklin, Garland, Johnson, Logan, Lonoke, Marion, Montgomery, Newton, Perry, Pike, Polk, Pope, Pulaski, Saline, Scott, Searcy, Sebastian, Sevier, Washington; MISSOURI counties (9 collections): Barry, Stone; OKLAHOMA counties (29 collections): Cherokee, Latimer, LeFlore, McCurtain, Pushmataha.

P. pallidus, ARKANSAS counties (27 collections): Baxter, Boone, Carroll, Fulton, Greene, Independence, Iard, Lawrence, Searcy, Sharp, Stone, VanBuren; MISSOURI counties (4 collections): Butler, Cooper, St. Louis; KENTUCKY, ILLINOIS, IOWA, NEW HAMPSHIRE, (1 collection each).

P. laxiflorus, ARKANSAS counties (11 collections): Benton, Bradley, Drew, Jefferson, Lincoln, Miller, Nevada, Union; OKLAHOMA counties (68 collections): Adair, Atoka, Bryan, Caddo, Carter, Choctaw, Cleveland, Comanche, Grady, Hughes, LeFlore, Lincoln, Logan, Love, McClain, McCurtain, Marshall, Murray, Okfuskee, Oklahoma, Pittsburg, Pushmataha, Seminole; TEXAS counties (4 collections): Bastrop, Erath, Grayson.

Included in the study were the following sheets determined by Pennell or cited in his Monogr. # 1, Acad. Nat. Sci. Phila. 1935:

P. arkansanus: ARKANSAS, Franklin: Cass, Moore 46072 (UARK); Garland: Hot Springs, Moore 460027 (UARK); Perry: Lake Ninrod, Moore 460034 (UARK); Yell: Havana, Moore (UARK) (Isotype of P. wherryi Pennell, cited p. 229); OKLAHOMA, LeFlore: Page, Hopkins 2951 (OKL); Pine Valley, Goodman 2485 (OKL); Stapp, Hopkins & Van Valkenburg 4285 (OKL); Summerfield, Hopkins & Van Valkenburg 4296 (OKL).

P. pallidus: ARKANSAS, Fulton: Mammoth Spring, Pennell 11542 (UARK) (Dupl. cited p. 225); Searcy: Marshall, Moore 470050 (UARK); MISSOURI, Cooper: 30 mi. w of St. Louis, Bush (OKL); St. Louis: Allentown, Pennell 11682 (OKL) (Dupl. cited p. 225).

P. laxiflorus: ARKANSAS, Jefferson: Jefferson Springs, Pennell 10658 (UARK) (Dupl. cited p. 232); OKLAHOMA, Atoka: Atoka, Hopkins 2842 (OKL); Logan: Exp. Station Farm, Goodman 2124 (OKL); McCurtain: 15 mi. nw Broken Bow, Hopkins 2893 (OKL); Idabel, Hopkins 2878 (OKL); Idabel, Houghton 3629 (OKL) (Dupl. cited p. 232); Pittsburg: McAlester, Pennell 10586 (OKL, UARK) (Dupl. cited p. 232).

Research at the University of Oklahoma Biological Station, NSF Grant GW 526 for Research Participation for High School Teachers and Academic Year Extension, supervised by Dr. George J. Goodman, University of Oklahoma, and Dr. Harriet G. Barclay, University of Tulsa.